

TEACHERS' RETIREMENT BOARD
BENEFITS AND SERVICES COMMITTEE

SUBJECT: Adoption of Factors from June 30, 1999 Experience
Analysis – Option Factors

ITEM NUMBER: 5a

ATTACHMENT(S): 5

ACTION: X

MEETING DATE: October 12, 2000

INFORMATION:

PRESENTER: Rick Reed

SUMMARY

When eligible for retirement, a member of the Defined Benefit (DB) Program and a participant in the Cash Balance (CB) Benefit Program may elect to modify his or her retirement allowance in order to provide lifetime income for an option beneficiary who survives the retired member. The modified allowance is determined by the application of a Joint and Survivor Annuity factor. The factors are based on interest assumptions, mortality rates, and experience of members who have elected options, which are examined every four years as a part of the quadrennial Actuarial Experience Analysis.

The current Joint and Survivor Annuity Factors became effective January 1, 1997, and were based on the interest assumption adopted as a result of the 1995 Actuarial Experience Analysis (1995 study) and a special study, as part of that analysis, of the experience of members who elected options. The Consulting Actuary has completed a new investigation of the experience with the different benefit options in conjunction with the 1999 Actuarial Experience Analysis (1999 study). As a result, the Teachers' Retirement Board needs to consider what changes in the option factors are appropriate for the DB Program and the CB Benefit Program.

Three elements are required for the calculation of Joint and Survivor Annuity factors:

1. Return on Investment,
2. Mortality Rates, and
3. Weighting for Unisex Application.

The current assumption for return on investments is 8.0 percent per annum. This is the same assumption adopted as part of the 1995 study.

The second element, Mortality Rates, continues to reflect a higher rate of mortality in the first few years after a member retires for service for those members selecting options 2 and 6. Under these options, the beneficiary receives the same allowance that was paid to the member upon the member's death. This is to be expected because a member who is electing an option and does not

expect to survive beyond a few years will almost certainly elect one of these two options to maximize the benefit paid to the beneficiary. The 1999 study indicates that the mortality for this group in the two years following retirement has remained about the same as the mortality found in the 1995 study. Aside from the higher mortality for the members who select options 2 and 6, the mortality rates for members retiring for service who select other options are consistent with those of the general service retirement population. Mortality for both disabled members and male beneficiaries has improved. The Consulting Actuary has recommended using the mortality assumptions for Retired Members, Beneficiaries, and Termination from Disability adopted by the Board as part of the 1999 study, with an adjustment to retired member mortality for options 2 and 6 to reflect the described higher mortality for this group. The amount of this adjustment is shown on Attachment 1. The Consulting Actuary has further recommended that Option 6 use the same assumptions as Option 2, and that Option 7 use the assumptions for Option 3.

The final element, Weighting for Unisex Application, consists of information about the relative proportion of male and female members who retired and selected an option in the previous year. This information is developed based on actual information concerning the option selected and the allowance for each option population. A weighted average is produced for each option. This weighted average is then used to create unisex Joint and Survivor Annuity factors. The recommended information provided by the Consulting Actuary for this purpose is also shown on Attachment 1.

The results of the assumption changes, as recommended by the Consulting Actuary, are shown as Attachment 2 for service retirements and Attachment 3 for disability retirements. As can be seen in these two attachments, the percentage reduction required when a member selects an option will be smaller than is required under the current option factors. This reflects the improved mortality of CalSTRS males who disproportionately elect to modify their allowances to provide an allowance to a beneficiary after their death.

These changes in assumptions and weighting have made it necessary to adopt new Joint and Survivor Annuity factors to maintain cost neutrality for these benefits. The California State Teachers' Retirement System has traditionally implemented new Joint and Survivor Annuity factors on January 1 to allow an orderly administration of the change. Any change in factors effective on July 1 has the potential to cause confusion for the large number of members retiring in June. Adoption of factors effective January 1 will make the new factors applicable to all members retiring following that date and give the major group retiring the following June sufficient advance notice.

RECOMMENDATION

Adopt new Joint and Survivor Annuity factors to be effective January 1, 2001, as recommended by the Consulting Actuary, to be applied to the DB Program and the CB Benefit Program.

CALIFORNIA STATE TEACHERS' RETIREMENT SYSTEM
Data Necessary for the Calculation of
Joint and Survivor Annuity Factors

Effective January 1, 2001

INTEREST RATE 8.00%

MORTALITY RATES:

Beneficiaries	Male	1999	CalSTRS Beneficiary - M
	Female	1999	CalSTRS Beneficiary - F

Members (Service Retirement):

Option 2 & 6

	<u>Male</u>	
	year 1	140% 1999 CalSTRS Retired - M
	year 2	125% 1999 CalSTRS Retired - M
	year 3	115% 1999 CalSTRS Retired - M
	year 4	110% 1999 CalSTRS Retired - M
	year 5 & up	1999 CalSTRS Retired - M
	<u>Female</u>	
	year 1	400% 1999 CalSTRS Retired - F
	year 2	250% 1999 CalSTRS Retired - F
	year 3	200% 1999 CalSTRS Retired - F
	year 4	150% 1999 CalSTRS Retired - F
	year 5 & up	1999 CalSTRS Retired - F

Option 3 & 7

	Male	1999 CalSTRS Retired - M
	Female	1999 CalSTRS Retired - F

Option 4

	Male	1999 CalSTRS Retired - M
	Female	1999 CalSTRS Retired - F

Option 5

	Male	1999 CalSTRS Retired - M
	Female	1999 CalSTRS Retired - F

Members (Disability Retirement):

	Male	1994 GAM-M (Minimum 2.5%)
	Female	1994 GAM-F (Minimum 2.2%)

WEIGHTING:

	<u>Male</u>	<u>Female</u>
Option 2 & 6	69.69%	30.31%
Option 3 & 7	44.39%	55.61%
Option 4	90.23%	9.77%
Option 5	82.98%	17.02%

CALIFORNIA STATE TEACHERS' RETIREMENT SYSTEM
Defined Benefit Program
Joint & Survivor Annuity Factor Examples
for
Service Retirement

Recommended Factors Effective January 1, 2001

<u>Member Age 55</u>						
Beneficiary Age	<u>Opt. 2</u>	<u>Opt. 3</u>	<u>Opt. 4</u>	<u>Opt. 5</u>	<u>Opt. 6</u>	<u>Opt. 7</u>
50	0.8865	0.9492	0.9302	0.9606	0.8812	0.9461
55	0.9061	0.9593	0.9539	0.9868	0.8986	0.9553
60	0.9260	0.9690	0.9836	1.0222	0.9160	0.9640
65	0.9446	0.9776	1.0193	1.0683	0.9324	0.9719

<u>Member Age 60</u>						
Beneficiary Age	<u>Opt. 2</u>	<u>Opt. 3</u>	<u>Opt. 4</u>	<u>Opt. 5</u>	<u>Opt. 6</u>	<u>Opt. 7</u>
50	0.8284	0.9200	0.8837	0.9216	0.8224	0.9163
55	0.8525	0.9336	0.9089	0.9477	0.8436	0.9284
60	0.8791	0.9476	0.9410	0.9831	0.8665	0.9408
65	0.9059	0.9609	0.9799	1.0293	0.8894	0.9537

Current Factors (Effective 1/1/1997)

<u>Member Age 55</u>						
Beneficiary Age	<u>Opt. 2</u>	<u>Opt. 3</u>	<u>Opt. 4</u>	<u>Opt. 5</u>	<u>Opt. 6</u>	<u>Opt. 7</u>
50	0.8730	0.9444	0.9220	0.9607	0.8670	0.9410
55	0.8926	0.9545	0.9454	0.9869	0.8843	0.9502
60	0.9131	0.9645	0.9744	1.0216	0.9021	0.9592

<u>Member Age 60</u>						
Beneficiary Age	<u>Opt. 2</u>	<u>Opt. 3</u>	<u>Opt. 4</u>	<u>Opt. 5</u>	<u>Opt. 6</u>	<u>Opt. 7</u>
55	0.8403	0.9291	0.9015	0.9493	0.8309	0.9237
60	0.8667	0.9432	0.9327	0.9840	0.8536	0.9362
65	0.8943	0.9569	0.9713	1.0303	0.8769	0.9483

Previous Factors (Effective 1/1/1993)

		<u>Member Age 55</u>					
Beneficiary	<u>Age</u>	<u>Opt. 2</u>	<u>Opt. 3</u>	<u>Opt. 4</u>	<u>Opt. 5</u>	<u>Opt. 6</u>	<u>Opt. 7</u>
	50	0.8785	0.9411	0.9273	0.9613	0.8732	0.9381
	55	0.8966	0.9509	0.9490	0.9859	0.8892	0.9469
	60	0.9158	0.9609	0.9764	1.0190	0.9059	0.9558

		<u>Member Age 60</u>					
Beneficiary	<u>Age</u>	<u>Opt. 2</u>	<u>Opt. 3</u>	<u>Opt. 4</u>	<u>Opt. 5</u>	<u>Opt. 6</u>	<u>Opt. 7</u>
	55	0.8467	0.9247	0.9074	0.9499	0.8382	0.9199
	60	0.8714	0.9385	0.9368	0.9830	0.8595	0.9320
	65	0.8976	0.9524	0.9736	1.0275	0.8816	0.9441

CALIFORNIA STATE TEACHERS' RETIREMENT SYSTEM
Defined Benefit Program
Joint & Survivor Annuity Factor Examples
for
Disability Retirement

Recommended Factors Effective January 1, 2001

		<u>Member Age 55</u>					
Beneficiary	<u>Age</u>	<u>Opt. 2</u>	<u>Opt. 3</u>	<u>Opt. 4</u>	<u>Opt. 5</u>	<u>Opt. 6</u>	<u>Opt. 7</u>
	50	0.7644	0.8746	0.8300	0.8779	0.7558	0.8683
	55	0.7873	0.8889	0.8545	0.9038	0.7742	0.8797
	60	0.8136	0.9047	0.8861	0.9391	0.7942	0.8917
	65	0.8423	0.9211	0.9252	0.9852	0.8153	0.9040

		<u>Member Age 60</u>					
Beneficiary	<u>Age</u>	<u>Opt. 2</u>	<u>Opt. 3</u>	<u>Opt. 4</u>	<u>Opt. 5</u>	<u>Opt. 6</u>	<u>Opt. 7</u>
	50	0.7430	0.8623	0.8095	0.8597	0.7356	0.8567
	55	0.7682	0.8785	0.8348	0.8855	0.7566	0.8701
	60	0.7976	0.8964	0.8675	0.9207	0.7801	0.8844
	65	0.8300	0.9151	0.9082	0.9667	0.8052	0.8991

Current Factors (Effective 1/1/1997)

		<u>Member Age 55</u>				
Beneficiary						
<u>Age</u>	<u>Opt. 2</u>	<u>Opt. 3</u>	<u>Opt. 4</u>	<u>Opt. 5</u>	<u>Opt. 6</u>	<u>Opt. 7</u>
50	0.7166	0.8545	0.7840	0.8515	0.7078	0.8478
55	0.7394	0.8691	0.8081	0.8772	0.7262	0.8596
60	0.7666	0.8857	0.8393	0.9116	0.7470	0.8724

		<u>Member Age 60</u>				
Beneficiary						
<u>Age</u>	<u>Opt. 2</u>	<u>Opt. 3</u>	<u>Opt. 4</u>	<u>Opt. 5</u>	<u>Opt. 6</u>	<u>Opt. 7</u>
55	0.7233	0.8593	0.7920	0.8619	0.7117	0.8507
60	0.7528	0.8777	0.8240	0.8961	0.7353	0.8656
65	0.7869	0.8978	0.8648	0.9420	0.7615	0.8813

Previous Factors (Effective 1/1/1993)

		<u>Member Age 55</u>				
Beneficiary						
<u>Age</u>	<u>Opt. 2</u>	<u>Opt. 3</u>	<u>Opt. 4</u>	<u>Opt. 5</u>	<u>Opt. 6</u>	<u>Opt. 7</u>
50	0.7216	0.8595	0.8137	0.8695	0.7130	0.8540
55	0.7430	0.8732	0.8363	0.8937	0.7298	0.8651
60	0.7686	0.8888	0.8657	0.9265	0.7491	0.8773

		<u>Member Age 60</u>					
Beneficiary	<u>Age</u>	<u>Opt. 2</u>	<u>Opt. 3</u>	<u>Opt. 4</u>	<u>Opt. 5</u>	<u>Opt. 6</u>	<u>Opt. 7</u>
	55	0.7246	0.8616	0.8183	0.8769	0.7131	0.8543
	60	0.7527	0.8793	0.8486	0.9097	0.7352	0.8688
	65	0.7855	0.8988	0.8875	0.9540	0.7597	0.8842

CALIFORNIA STATE TEACHERS' RETIREMENT SYSTEM
Cash Balance Benefit Program
Joint & Survivor Annuity Factor Examples
for
Service Retirement and Disability

Recommended Factors Effective January 1, 2001

Member Age 55

Beneficiary		
<u>Age</u>	<u>Opt. 3</u>	<u>Opt. 4</u>
50	0.9175	0.9556
55	0.9276	0.9625
60	0.9803	0.9692
65	0.9522	0.9755

Member Age 60

Beneficiary		
<u>Age</u>	<u>Opt. 3</u>	<u>Opt. 4</u>
50	0.8691	0.9300
55	0.8854	0.9392
60	0.9028	0.9489
65	0.9208	0.9584

PROPOSED
RESOLUTION
OF THE
TEACHERS' RETIREMENT BOARD
BENEFITS AND SERVICES COMMITTEE

SUBJECT: Joint and Survivor Annuity Factors

RESOLUTION NO.

WHEREAS, the Teachers' Retirement Board has, as a result of adoption of the 1999 Actuarial Experience Analysis Report at the February 3, 2000 Board meeting, revised interest and mortality assumptions; and

WHEREAS, the Joint and Survivor Annuity factors previously adopted by the Board are not consistent with these revised assumptions. Therefore, be it

RESOLVED, that the Benefits and Services Committee recommend that the Teachers' Retirement Board adopt, effective January 1, 2001, Joint and Survivor Annuity factors based upon the attached assumptions, to be used for modifying Service Retirement and Disability Retirement allowances under the Defined Benefit Program and annuity payments under the Cash Balance Benefit Program.

Adopted by:
Benefits and Services Committee

Ratified by:
Teachers' Retirement Board

on October 12, 2000

JAMES D. MOSMAN
Chief Executive Officer